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McKinney et al.

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(54) **FUNCTIONALIZED GRAPHENE
SUBSTRATES**

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(58) **Field of Classification Search**

CPC **C07K 17/14**
See application file for complete search history.

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(57) **ABSTRACT**

The present invention is generally directed to functionalized
graphene substrates, methods of making such substrates and
methods of using such substrates. In one aspect, the present
invention provides a graphene substrate. The substrate com-
prises edge and non-edge regions, and organic or inorganic
molecules are bound to the edge regions of the substrate. The
organic or inorganic molecules are present on the substrate
edges at a population greater than about one molecule per
10,000 nm.

14 Claims, 17 Drawing Sheets